

REMARKS

Favorable reconsideration in view of the previous amendments and following remarks is respectfully requested.

Claims 24-44 are pending. By this Amendment, claims 42-44 are amended to address the claim objections.

The Office Action rejects claims 24-32, 35, 36, 39-41 and 43 under 35 U.S.C. §103(a) over U.S. Patent No. 5,898,995 to Ghodbane in view of U.S. Patent No. 6,347,527 to Bailey et al.; rejects claim 42 under 35 U.S.C. §103(a) over Ghodbane in view of Bailey and further in view of U.S. Patent No. 5,291,182 to Wiseman; rejects claims 33, 34, 38 and 44 under 35 U.S.C. §103(a) over Ghodbane and Bailey and further in view of U.S. Patent No. 6,405,793 to Ghodbane et al; and rejects claim 37 under 35 U.S.C. §103(a) over Ghodbane in view of Bailey and Ghodbane '793 and further in view of U.S. Patent Application Publication No. 2005/0061311 to Christensen. These rejections are respectfully traversed.

Applicants' independent claim 24 is directed to a heat pump comprising a refrigerant loop including a refrigerant evaporator. The refrigerant evaporator is a combined fluid air evaporator including at least two duct systems. At least one of the two duct systems has a free surface to which lamellar plane elements are attached which come into thermal contact with a direct air flow. The at least two duct systems are at least partially in thermal contact with one another. A refrigerant is conducted through one duct system and an exothermic fluid is conducted through the other duct system. The refrigerant comes into thermal contact with the exothermic fluid. Using the lamellar plane elements attached to the free surface, the refrigerant comes into thermal contact with the direct air flow.

Such features encompass Applicants' exemplary embodiment as illustrated in Figs. 1 and 2 wherein heat pump 6 includes combined fluid air evaporator 2 and at least two separate duct systems including an exterior pipeline 10 and an internal pipeline 11. An airflow is directed to come into thermal contact with lamellar body 9 which causes a heat transfer to fluid passing through pipelines 10 and 11. An exothermic fluid, such as brine, is conducted through the pipeline 11 and a refrigerant is conducted through the pipeline 10. There is close thermal contact between the refrigerant, the exothermic fluid and the air flowing around the lamellar bodies 9.

The Examiner recognizes that the Ghodbane '995 patent fails to disclose a heat pump. Applicants respectfully disagree with the Examiner's assertion that the ordinarily skilled artisan would have been motivated to combine the Ghodbane '995 patent with the Bailey patent. In particular, the Examiner suggest to substitute the refrigerant evaporator of Ghodbane '995 into the refrigerant loop of Bailey in order to provide refrigerant flow through a system to effectively exchange heat via the evaporator to condition a space.

The Bailey patent discloses an integrated system for heating, cooling and heat recovery ventilation. Heating and cooling can be accomplished with a heat pump, for example geothermal or air to air. In the heating mode, the main thermodynamic cycle comprises an evaporator (Freon to water coil 6, see Fig. 7) which evaporates Freon by absorption of, for example, geothermal energy. An indoor air coil 5, acting as a condenser transfers the Freon energy to the indoor air.

The Bailey patent discloses that there could be an optional secondary air coil 10 acting in the same mode as the Freon to water coil 6, that is, as an evaporator in the heating mode. In the cooling mode, the Freon to water coil 6 and the optional air coil 10 act as condensers and the air coil 5 acts as the evaporator. Each of the water coil 6, the air coil 5 and the secondary air coil 10 can exchange heat between two media. For example, a cooled Freon is cooled down within the TX valve 67a and an exhaust air passes through the secondary air coil 10. The Freon absorbs heat from the exhaust gas.

The Examiner suggests to substitute the heat exchanger of Ghodbane which allows a heat exchange between three media. However, the heat exchanger of Bailey is arranged to operate under specific operating conditions which involve heat exchange between two media. The introduction of a third media or heat exchange can only be accomplished by rearranging other components and changing control criteria in the heat recovery ventilation system.

Also as disclosed in the Bailey patent at column 17, lines 17-19, the common outdoor temperatures and the various geographic locations would dictate the positioning of the secondary air coil 10. The water coil 6 is located to absorb energy from the ground. See the Bailey patent at Col. 6, line 54 et seq. Thus, in Bailey the secondary air coil 10 and the water coil 6 are taught as separate units. Thus, a combination of a water coil with an air coil would not be done by the ordinarily skilled artisan.

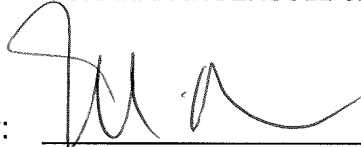
The dependent claims are allowable for at least the reasons discussed above as well as for the individual features they recite.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful and resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicted below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

A handwritten signature in black ink, appearing to read 'Michael Britton', written over a horizontal line.

By:

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